| Work Ord                               |                        | 181                      |                                       |            | *            | 991                   | 81*                                   |          |            |              |              |            |               |                  | Page           | 1<br>************************************ |
|--|------------------------|--------------------------|---------------------------------------|------------|--------------|-----------------------|---------------------------------------|----------|------------|--------------|--------------|------------|---------------|------------------|----------------|---|
| Item ID:<br>Revision ID:<br>Item Name: | D4092-041  Maintenance | Step Assembly            |                                       |            | Accept       | <u>-</u> 16 1-11 11 - | *NC                                   | 300      | <u>040</u> | 100          | )*           | Setup      | Start<br>Stop | 1.71             | S1*<br>S2*     |   |
| Start Date:                            | 3/27/13                | Start Qty: 2.0           | 00                                    | *2*        |              |                       | Cus                                   | t Item 1 | ID:        |              |              |            |               |                  |                |   |
| Required Date:                         | : 3/27/13              | Req'd Qty: 2.0           | 00                                    | *2*        |              |                       | Cus                                   | tomer:   |            |              |              |            |               |                  |                |   |
| Reference:                             |                        |                          |                                       | -          |              |                       |                                       |          |            |              |              |            |               |                  | •              |   |
| Approvals:                             | Process Pla            | an: MLJ                  | Date:                                 | 3-04-0     | Z_Tooling    | g:                    |                                       | D        | ate:       |              |              | Run        | Start<br>Stop | *N               | R1*            |   |
|  | QC:                    |                          | Date:_                                |            | SPC (Y       | //N):                 |                                       | D        | ate:       |              |              |            | жор           | *N               | R2*            |   |
| Sequence ID/<br>Work Center I          | D                      | Operation<br>Description |                                       |            | Set I<br>Run | Up/<br>Hours          | To                                    | ool ID   | Tool #     | Plan<br>Code | Accep<br>Qty | t Re<br>Qt |               | Reject<br>Number | Insp.<br>Stamp | · ;                                       |
| Draw Nbr                               | Rev                    | vision Nbr               |                                       |            |              |                       |                                       |          |            |              |              |            |               |                  |                |   |
| D4092                                  | В                      |                          | i                                     |            |              |                       |                                       |          |            |              |              |            |               |                  |                |   |
| 100                                    |                        | Pick Kit                 |                                       |            | 0.00         | 825                   | • • • • • • • • • • • • • • • • • • • |          |            |              |              |            |               | n                | ( \            | a-)                                       |
| *100* Packaging                        |                        | Memo                     | )                                     |            | 0.00         |                       | •                                     |          |            |              | <b>3</b> X   |            | _\J\.         | W. 13            | 8-07-          | 23  |
| Packaging                              |                        |                          |                                       |            |              |                       |                                       |          |            |              |              |            |               |                  |                |   |
| 110                                    |                        |                          |                                       |            | 0.00         |                       | X                                     | \        |            |              |              |            |               |                  | $\leq$         | R. I                                      |
| *110*                                  |                        |                          |                                       |            | 0.00         |                       |                                       | Y        |            |              | つ            |            |               |                  | /2             | 167/23                                    |
| Small Fab                              |                        | Memo                     | )                                     |            | 0.00         |                       |                                       |          |            |              |              |            |               |                  |                |   |
| Small Fab                              |                        |                          | able as per Dwg<br>e screws up to 15- | 25 in- lbs |              |                       |                                       |          |            |              |              |            |               |                  |                |   |
| *120<br>*120*                          |                        | QC5- Inspect part        | completeness to st                    | ep on W/O  | 0.00         | <i>∞</i>              |                                       |          |            |              | 2            |            | •             |                  |                |   |
| QC Quality Control                     |                        | Memo                     | )                                     |            | 0.00         | RT                    | <b>B</b>                              |          |            |              |              |            | <del></del>   | <del></del>      |                | ·<br>:                                    |

1,

| NCR: Y                                 | es / No    |            |          |         | WORK ORDER NON-            | CONFO    | RMANCE / UI                    | PDATE      | OA Classid   | Data          |                    |
|--|------------|------------|----------|---------|----------------------------|----------|--------------------------------|------------|--------------|---------------|--------------------|
|  |            |            |          |         | T                          | <u> </u> |                                |            | QA Closed:   | Date:         | -                  |
| Work Orde                              | r:         |            |          |         | DISPOSITION                | İ        |                                | AGAINST DE | PARTMENT,    | /PROCESS      |                    |
|  |            |            |          |         | Rework                     | ] [      | Skid-tube                      | Crosstube  |              | Water Jet     | Engineering        |
| Part N                                 | 0.         |            |          |         | Scrap                      | ]        | Machining                      | Small Fab  | Pro          | d. Eng. Coor. | Quality            |
|  |            |            |          |         | Use-as-is                  | The      | ermoforming                    | Finishing  | Rec/Stor     | e/Packaging   | Other              |
| NCR N                                  | 0          |            |          | <u></u> | Work Order Update          | ]        | Large Fab                      | Composite  | ]            | Supplier      |                    |
| Root                                   |            |            |          | Descri  | ption of work order update | Initial  | j                              | ction      | Sign &       |               |                    |
| Cause                                  | Date       | Step       | Qty      |         | or Non-conformance         | Chief Er | ng Des                         | cription   | Date         | Verification  | QC Inspector       |
| Ooc/Data                               | _          |            |          |         |                            |          |                                |            |              |               |                    |
| quip/Tooling                           |            |            |          |         |                            |          |                                |            |              |               |                    |
| Operator                               |            |            | <u> </u> |         |                            |          |                                |            |              |               |                    |
| Material                               |            |            |          |         |                            |          |                                |            |              |               |                    |
| Setup                                  | _          |            |          |         |                            |          |                                |            |              |               |                    |
| Other                                  |            | 1          |          |         |                            | 5        |                                |            |              |               |                    |
| Process                                | _          |            |          |         |                            |          |                                |            |              |               |                    |
| Supplier                               | -          |            |          |         |                            | 1        |                                |            |              |               |                    |
| Training                               | -          |            |          |         |                            |          |                                |            |              |               |                    |
| Jnapproved                             |            | <b></b>    |          |         |                            | AULT CA  | <br>TFGORY                     |            | <u>i</u>     |               |                    |
| Landin                                 | g Gear     |            |          |         | General                    | 7.02.    |                                |            |              |               |                    |
| [                                      | Bending    |            |          | Г       | Bend                       | Grai     | n                              | Γ          | Ovalized     | Γ             | Pressure/Forced    |
| Ì                                      | Centre N   | ot Conce   | ntric to | o/s     | BOM/Route                  | Hard     | ware                           |            | Over/Under   | tolerance     | Temperature/Cure   |
| ľ                                      | Cracks     |            |          |         | Broken/Damaged             | inspe    | ection Incomplete              |            | Part Incorre | ct            | Weld               |
| ļ                                      | Crushed/   | Crimped    | -        |         | Burrs                      | Instr    | uctions Incomplete             | e/Unclear  | Part Lost/M  | issing        | Wrong Stock Pulled |
|  | Cuffs      |            |          |         | Contamination              | Mai      | ntenance                       |            | Part Moved   | _             | <del></del>        |
| Ţ                                      | Heat Trea  | at         |          |         | Countersink                | Misl     | abeled                         |            | Positioned   | Wrong         |                    |
| Inspection Strip in Tube Cut Too Short |            |            |          |         |                            |          | Misread Power Loss/Surge Other |            |              |               |                    |
| ſ                                      | Ripples in | n Bend     |          |         | Drill Holes                | Qffset   |                                |            |              |               |                    |
|  | Torque V   | Vaves in I | Extrusio | n _     | Drawing                    | Out/     | of Calibration                 |            |              |               |                    |
| Γ                                      | Turning S  | Seauence   |          |         | Finish                     | Out      | of Sequence                    |            |              |               |                    |

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

Folio

| Work Ord<br>March-28-13                    |                        | 181   |                       | *991                 | 181*                     |            |              |               |            | Page 2        |                  |                |  |
|--|------------------------|---|-----------------------|----------------------|--------------------------|------------|--------------|---------------|------------|---------------|------------------|----------------|--|
| Item ID:<br>Revision ID:<br>Item Name:     | D4092-041  Maintenance | Step Assembly                                   | . <del> </del>        | Accept               | *N900                    | <b>040</b> | 100          | )*            | Setup      | Start<br>Stop | 14.              | S1*<br>S2*     |  |
| Start Date:<br>Required Date<br>Reference: | 3/27/13<br>e: 3/27/13  | Start Qty: 2.00<br>Req'd Qty: 2.00              | *2*<br>*2*            |                      | Cust Item I<br>Customer: | D:         |              |               |            |               |                  |                |  |
| Approvals:                                 | Process Pla            | an:   | Date:                 | Tooling:             | Da                       | ate:       | -            | ]             | Run        | Start         | *N               | R1*            |  |
|  | QC:                    |   | Date:                 | SPC (Y/N):           | Da                       | ate:       |              |               |            | Stop          | *N               | R2*            |  |
| Sequence ID/<br>Work Center                | ID                     | Operation Description Identify as per dwg & Sto | ock Location: 5 T 270 | Set Up/<br>Run Hours | Tool ID                  | Tool #     | Plan<br>Code | Accept<br>Qty | Rej<br>Qty |               | Reject<br>Number | Insp.<br>Stamp |  |
| *130*<br>Packaging                         |                        | Memo  |                       | 0.00                 |                          |            |              | 2             |            | _             | <u></u>          | 13-17-2        |  |
| Packaging                                  |                        | OC21- Final Inspection -                        | Work Order Release    | 0.00                 |                          |            |              |               |            | أ ما          | 1nh              | u A            |  |

0.00

Memo

\*14**0**\*

Quality Control

13/1/24 10 MF 13-7-24

| NCR: | Yes | / | No   |
|------|-----|---|------|
|      | ,   | • | ,,,, |

DQA: \_\_\_\_\_ Date: \_\_\_\_

| NCR: Y              | es / No    |            |          |          | WORK ORDER NON-            | CONFO   | RMANCE / U             | PDATE                  | QA Closed:   | Date                                    | :                   |
|---------------------|------------|------------|----------|----------|----------------------------|---------|------------------------|------------------------|--------------|---|---------------------|
| Work Orde           | r·         | ·          |          |          | DISPOSITION                |         |                        | AGAINST DE             | PARTMENT     | PROCESS                                 |                     |
|                     |            |            |          | <u> </u> | Rework                     | ]       | Skid-tube<br>Machining | Crosstube<br>Small Fab | Pro          | Water Jet<br>d. Eng. Coor.              | Engineering Quality |
| Part N              | o          |            |          |          | Scrap<br>Use-as-is         | - I The | ermoforming            | Finishing              | 4            | e/Packaging                             | Other               |
| NCR N               | o          |            |          | ·····    | Work Order Update          |         | Large Fab              | Composite              | Nec/stol     | Supplier                                |                     |
| Root                |            | <u> </u>   |          |          | ption of work order update | Initia  | 1                      | Action                 | Sign &       |   |                     |
| Cause               | Date       | Step       | Qty      |          | or Non-conformance         | Chief E | ng Des                 | scription              | Date         | Verification                            | QC Inspector        |
| Doc/Data            | _          |            |          |          |                            |         |                        |                        |              |   |                     |
| Equip/Tooling       | _          |            |          |          |                            |         |                        |                        |              |   | İ                   |
| Operator            |            |            |          |          |                            |         |                        |                        |              |   |                     |
| Material            | _          | Ì          |          |          |                            | 1       |                        |                        |              |   |                     |
| Setup               | _          |            |          |          |                            | ļ       | it<br>I                |                        |              |   |                     |
| Other               |            |            |          |          |                            |         |                        |                        |              |   |                     |
| Process<br>Supplier |            |            |          |          | •                          |         |                        |                        |              |   |                     |
| Training            | _          |            |          |          |                            |         |                        |                        |              |   |                     |
| Unapproved          |            |            |          |          |                            |         |                        | ÷.                     |              |   | ,                   |
|                     | \          |            | <u> </u> |          | F                          | AULT CA | TEGORY                 |                        |              |   | 1                   |
| Landin              | g Gear     |            |          |          | General                    |         |                        |                        |              |   |                     |
|                     | Bending    |            | •        |          | Bend                       | Gra     | n                      |                        | Ovalized     |   | Pressure/Forced     |
|                     | Centre N   | ot Conce   | ntric to | o/s      | BOM/Route                  | Hard    | lware                  |                        | Over/Under   | tolerance                               | Temperature/Cure    |
|                     | Cracks     |            |          |          | Broken/Damaged             | lnsp    | ection Incomplete      |                        | Part Incorre | ct _                                    | Weld                |
|                     | Crushed/   | Crimped    |          |          | Burrs                      | Insti   | uctions Incomplet      | e/Unclear              | Part Lost/M  | issing                                  | Wrong Stock Pulled  |
| [                   | Cuffs      |            |          |          | Contamination              | Mai     | ntenance               |                        | Part Moved   |   |                     |
|                     | Heat Trea  | at         |          |          | Countersink                | Misl    | abeled                 |                        | Positioned \ |   |                     |
|                     | Inspectio  | n Strip in | Tube     |          | Cut Too Short              | Misi    | ead                    |                        | Power Loss,  | 'Surge                                  | Other               |
|                     | Ripples ir | n Bend     |          |          | Drill Holes                | Offs    | et                     |                        |              | , |                     |
|                     | Torque V   | Vaves in   | Extrusio | n        | Drawing                    | Out     | of Calibration         |                        |              |   |                     |
|                     | Turning 9  | Sequence   | <b>:</b> | -        | Finish                     | Out     | of Sequence            |                        |              |   |                     |
|                     | Wave/Tv    | vist in Tu | be       |          | Folio                      | Out     | side Dimensions        |                        |              |   |                     |

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Page 1

Work Order ID:

99181

Parent Item:

D4092-041

Parent Item Name:

Maintenance Step Assembly

**Start Date:** 3/27/13

Required Date: 3/27/13

Start Qty: 2.00

Required Qty: 2.00

Comments:

IPP REV:A NEW ISSUE 10-06-01 JLM VERIFIED BY:DD

639 JLM VERIFIED BY:DD

IPP REV:B AS PER ECN 11-

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location        | Last<br>Location | Route<br>Seq ID      | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit                            | Total<br>Qty |      | Date Status<br>ssued |    |
|---------------------------------|------------------------|---------------|-------------|----------------------------|------------------|----------------------|--------------------|----------------|--|--------------|------|----------------------|----|
| D4092-1<br>Maintenance Step     |                        | Manufactured  | No          |                            | ,                | 100                  | Each               | 14.0000        | 2                                      | 4            | 1. N | 1. 13-07-2           | 23 |
|                                 |                        |               |             | <u>Location</u><br>GA      |                  | <u>Loc Oty</u><br>1  | Lo                 | oc Code        | BK                                     | 12366        | C    |                      |    |
|                                 |                        |               |             | 77852<br>ST241A            | 2                | 1<br>1               |                    |                | ************************************** |              |      |                      |    |
|                                 |                        |               |             | 74303<br>ST271A            | 3                | 1<br>12              |                    |                |  |              |      |                      |    |
| D4093-1<br>Bracket              |                        | Manufactured  | No          | 97500                      | )                | 100                  | Each               | 1.0000         | 1                                      | (2)          | M. K | Q                    |    |
|                                 |                        |               |             | Location<br>ST201          |                  | Loc Qty              | <u>Lo</u>          | oc Code        | <i>B9</i>                              | 9653         | (    | • 18                 |    |
| D4093-3<br>Bracket              |                        | Manufactured  | No          | 93754                      | ł                | 100                  | Each               | 4.0000         | 1                                      | 2            | M.L  | Į.                   |    |
|                                 |                        |               |             | Location<br>ST201          |                  | Loc Oty 4            | <u>Lo</u>          | oc Code        |  | ×            | 1    |                      |    |
| D4093-5<br>Bracket              |                        | Manufactured  | No          | 75250                      | ·                | 100                  | Each               | 8.0000         | 2                                      | 4            |      | SO 136               | 7/ |
|                                 |                        |               | Maga<br>St  | Location<br>ST093<br>97494 | 4                | Loc Oty  8  B  10  8 |                    | oc Code        |  | <u> </u>     |      |                      |    |

| NCR: Ye       | es / No    |            |                                       |          | WORK ORDER NON-                | CONFC    | ORN    | IANCE / UPDA        |                        | QA Closed:    | Date:                               |                           |
|---------------|------------|------------|---------------------------------------|----------|--------------------------------|----------|--------|---------------------|------------------------|---------------|-------------------------------------|---------------------------|
| Work Order    | :          |            | · · · · · · · · · · · · · · · · · · · |          | DISPOSITION                    | _        | •      |                     | AGAINST DEI            | PARTMENT/     | _                                   |                           |
| Part No       | 0          |            |                                       |          | Rework<br>Scrap                | <br>     | ٨      | Machining           | Crosstube Small Fab    |               | Water Jet J. Eng. Coor. e/Packaging | Engineering Quality Other |
| NCR No        | 0          |            |                                       |          | Use-as-is<br>Work Order Update | <u> </u> |        | Large Fab C         | Finishing<br>Composite | Rec/Stor      | Supplier                            | J Other                   |
| Root          |            |            |                                       | Descri   | ption of work order update     | Initia   | al     | Action              | 1                      | Sign &        |                                     |                           |
| Cause         | Date       | Step       | Qty                                   |          | or Non-conformance             | Chief E  | Eng    | Descript            | tion                   | Date          | Verification                        | QC Inspector              |
| Doc/Data      |            |            |                                       |          |                                |          |        |                     |                        |               |                                     |                           |
| Equip/Tooling |            |            |                                       |          |                                |          | l      |                     |                        |               |                                     |                           |
| Operator      |            |            |                                       |          |                                |          |        |                     |                        |               |                                     |                           |
| Material [    |            |            |                                       |          |                                | į        |        |                     |                        |               |                                     |                           |
| Setup         |            |            |                                       |          |                                |          |        |                     |                        |               |                                     |                           |
| Other         |            |            |                                       |          |                                |          |        |                     |                        |               |                                     |                           |
| Process       |            |            |                                       |          |                                | 1        |        | l                   |                        |               |                                     |                           |
| Supplier      |            |            |                                       |          |                                |          |        |                     |                        |               |                                     | ,                         |
| Training      |            |            |                                       |          |                                | 1        |        |                     |                        |               |                                     |                           |
| Unapproved    |            |            |                                       |          |                                |          |        |                     |                        |               |                                     |                           |
|               | •          | •          |                                       |          | F                              | AULT C   | ATE    | GORY                |                        |               |                                     |                           |
| Landin        | g Gear     |            |                                       |          | General                        |          |        |                     |                        | _             |                                     |                           |
|               | Bending    |            |                                       |          | Bend                           | Gra      | ain    |                     |                        | Ovalized      |                                     | Pressure/Forced           |
| Ī             | Centre No  | ot Conce   | ntric to                              | o/s      | BOM/Route                      | Har      | dwa    | re                  |                        | Over/Under    | tolerance                           | Temperature/Cure          |
| Ī             | Cracks     |            |                                       | . [      | Broken/Damaged                 | Inst     | pecti  | on Incomplete       |                        | Part Incorred | ct                                  | Weld                      |
| Γ             | Crushed/   | Crimped.   |                                       |          | Burrs                          | Inst     | truct  | ions Incomplete/Unc | clear                  | Part Lost/Mi  | ssing                               | Wrong Stock Pulled        |
| . [           | Cuffs      |            |                                       |          | Contamination                  | Ma       | inte   | nance               |                        | Part Moved    |                                     | •                         |
| ľ             | Heat Trea  | at         |                                       | <u> </u> | Countersink                    | Mis      | slabe  | led                 |                        | Positioned V  | Vrong                               |                           |
| F             | Inspection | n Strip in | Tube                                  |          | Cut Too Short                  | Mis      | sread  | ł                   |                        | Power Loss/   | Surge                               | Other                     |
| <u> </u>      | Ripples in |            |                                       |          | Drill Holes                    | Off      | set    |                     |                        | -             |                                     |                           |
|               | Torque W   |            | Extrusio                              | n        | Drawing                        | Out      | t of C | Calibration         |                        |               |                                     |                           |
| <u> </u>      | Turning S  |            |                                       |          | Finish                         | Out      | t of S | Sequence            |                        |               |                                     |                           |
|               | Wave/Tw    |            |                                       |          | Folio                          | _        |        | Dimensions          |                        |               |                                     |                           |

DQA:

Date:

Page 2

March-28-13 12:55:44 PM

| Work Order ID:    | 99181                     |     |                  |         |       |                 |              |                        |
|-------------------|---------------------------|-----|------------------|---------|-------|-----------------|--------------|------------------------|
| Parent Item:      | D4092-041                 |     |                  |         |       | Start Da        | ate: 3/27/13 | Required Date: 3/27/13 |
| Parent Item Name: | Maintenance Step Assembly |     |                  |         |       | Start C         | ty: 2.00     | Required Qty: 2.00     |
| MS24694-S54       | Purchased                 | No  |                  | 100 E   | Each  | 78.0000         | 2            | (4) M// 12.07.27       |
| Screw             |                           |     |                  |         |       |                 |              | M. Ll. 13-07-23        |
|                   |                           |     | Location         | Loc Qty |       | Loc Code        |              | ·                      |
|                   |                           |     | ST303            | 78      |       |                 | 12553        | 5                      |
|                   |                           |     | 123900           | 3       |       |                 |              | _                      |
|                   |                           |     | 124859           | 75      |       |                 |              |                        |
| MS24694-S55       | Purchased                 | No  |                  | 100 E   | Each  | 93.0000         | 8 (          | (16) M. LD.            |
| Screw             |                           |     | _                |         |       |                 | -            | 1:10                   |
|                   |                           |     | <u>Location</u>  | Loc Qty |       | Loc Code        |              | _                      |
|                   |                           |     | ST303            | 93      |       |                 | 125535       | 2                      |
|                   |                           |     | 123758<br>124296 | 1<br>92 |       |                 |              | _                      |
| MS24694-S56       | Donali and                | No  | 124290           |         | Each  | 29.0000         | 2            | 4                      |
| SCREW             | Purchased                 | 110 |                  | 100     | Lucii | 27.0000         | - (          | 1.60.                  |
| SCREW             |                           |     | <u>Location</u>  | Loc Oty |       | Loc Code        |              | 7                      |
|                   |                           |     | ST303            | 29      |       | <u>Loc Code</u> | 12553        | 5                      |
|                   |                           |     | 121340           | 10      |       |                 | 1000         |                        |
|                   |                           |     | 124040           | 19      |       |                 |              | _                      |
| NAS1149D0332J     | Purchased                 | No  |                  |         | Each  | 1,364.0000      | 12           | (24) $(24)$            |
| Washer            | Turonasoa                 |     |                  |         |       |                 | \            | <u> </u>               |
|                   |                           |     | Location         | Loc Qty |       | Loc Code        |              | l                      |
|                   |                           |     | ST294            | 1364    |       | <del></del>     | 12580        | 7                      |
|                   |                           |     | 122973           | 364     |       |                 | 7.2.70       | _                      |
|                   |                           |     | 125044           | 1000    |       |                 |              | <del></del>            |
|                   |                           |     |                  |         |       |                 |              |                        |

|               |      |      |      |     |        |                            |     |         |            |            | DQA:       | Date:         |             |      |
|---------------|------|------|------|-----|--------|----------------------------|-----|---------|------------|------------|------------|---------------|-------------|------|
| NCR: Y        | es / | No   |      |     |        | WORK ORDER NON-C           | ON  | IFORI\  | MANCE / UP | DATE       | QA Closed: | Date:         |             |      |
| Work Orde     | r:   |      |      |     |        | DISPOSITION                |     |         |            | AGAINST DE | PARTMENT/  | PROCESS       |             |      |
|               | _    |      |      |     |        | Rework                     |     |         | Skid-tube  | Crosstube  |            | Water Jet     | Engineering |      |
| Part N        | lo.  |      |      |     |        | Scrap                      |     | l,      | Лachining  | Small Fab  | Prod       | d. Eng. Coor. | Quality     |      |
|               |      |      | ·    |     |        | Use-as-is                  |     | Therm   | oforming   | Finishing  | Rec/Stor   | e/Packaging   | Other       | ļ    |
| NCR N         | lo.  |      |      |     |        | Work Order Update          |     |         | Large Fab  | Composite  |            | Supplier      |             |      |
|               |      |      |      |     |        |                            |     |         |            |            |            |               |             | سميس |
| Root          |      |      |      |     | Descri | ption of work order update | lr  | nitial  | Ac         | tion       | Sign &     |               |             |      |
| Cause         |      | Date | Step | Qty |        | or Non-conformance         | Chi | ief Eng | Desc       | ription    | Date       | Verification  | QC Inspecto | )r   |
| Doc/Data      |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |
| Equip/Tooling |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |
| Operator      |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |
| Material [    |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |
| Setup         |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |
|               |      |      |      |     |        |                            |     |         |            |            |            |               |             |      |

|           | FAULT CATEGORY               |                |  |                                 |  |                      |                    |  |  |  |  |  |  |  |
|-----------|------------------------------|----------------|--|---------------------------------|--|----------------------|--------------------|--|--|--|--|--|--|--|
| Landing ( | Gear                         | General        |  |                                 |  | _                    | _                  |  |  |  |  |  |  |  |
|           | Bending                      | Bend           |  | Grain                           |  | Ovalized             | Pressure/Forced    |  |  |  |  |  |  |  |
|           | Centre Not Concentric to O/S | BOM/Route      |  | Hardware                        |  | Over/Under tolerance | Temperature/Cure   |  |  |  |  |  |  |  |
|           | Cracks                       | Broken/Damaged |  | Inspection Incomplete           |  | Part Incorrect       | Weld               |  |  |  |  |  |  |  |
|           | Crushed/Crimped.             | Burrs          |  | Instructions Incomplete/Unclear |  | Part Lost/Missing    | Wrong Stock Pulled |  |  |  |  |  |  |  |
|           | Cuffs                        | Contamination  |  | Maintenance                     |  | Part Moved           |                    |  |  |  |  |  |  |  |
|           | Heat Treat                   | Countersink    |  | Mislabeled                      |  | Positioned Wrong     |                    |  |  |  |  |  |  |  |
|           | Inspection Strip in Tube     | Cut Too Short  |  | Misread                         |  | Power Loss/Surge     | Other              |  |  |  |  |  |  |  |
|           | Ripples in Bend              | Drill Holes    |  | Offset                          |  |                      |                    |  |  |  |  |  |  |  |
|           | Torque Waves in Extrusion    | Drawing        |  | Out of Calibration              |  |                      |                    |  |  |  |  |  |  |  |
|           | Turning Sequence Finish      |                |  | Out of Sequence                 |  |                      |                    |  |  |  |  |  |  |  |
|           | Wave/Twist in Tube           | Folio          |  | Outside Dimensions              |  |                      |                    |  |  |  |  |  |  |  |

Other Process Supplier Training Unapproved

## **Picklist Print**

March-28-13 12:55:44 PM

Work Order ID:

99181

Parent Item:

D4092-041

Parent Item Name:

Maintenance Step Assembly

MS21042L3

Purchased

No

**Start Date: 3/27/13** 

5,370.0000

Required Date: 3/27/13

Page 3

Start Qty: 2.00

12

Required Qty: 2.00

Nut

| <b>Location</b> | Loc Qty | Loc Code |             |
|-----------------|---------|----------|-------------|
| FP001           | 3       |          | 126036      |
| 122141          | 3       |          |             |
| GA              | 155     |          |             |
| 122452          | 155     |          |             |
| ST314           | 268     |          |             |
| 117885          | 32      |          | <del></del> |
| 119017          | 55      |          |             |
| 119075          | 138     |          |             |
| 123265          | 43      |          |             |
| ST506           | 4944    |          |             |
| 123900          | 1064    |          |             |
| 124291          | 3880    |          |             |

Each

100

|               |                        |           |            |          |          |                            |            |             |                   |                  | DQA        | .: Da          | te:      |                    |
|---------------|------------------------|-----------|------------|----------|----------|----------------------------|------------|-------------|-------------------|------------------|------------|----------------|----------|--------------------|
| NCR:          | Yes                    | / No      |            |          |          | WORK ORDER NON-            |            | NFORIN      | MANCE / UPD       | ATE              |            |                |          |                    |
|               |                        |           |            |          |          |                            |            |             |                   |                  | QA Closed  | l: Da          | te:      |                    |
| Mork Ord      | ٠                      |           |            |          |          | DISPOSITION                |            |             |                   | AGAINST DE       | PARTMEN    | T/PROCESS      |          |                    |
| Work Ord      | ег.                    |           |            |          |          | Rework                     | 7          |             | Skid-tube         | Crosstube        | 1          | Water Jet      |          | Engineering        |
| Part I        | ۷in                    |           |            |          |          | Scrap                      | 1          | •           | Machining         | Small Fab        | Pr         | od. Eng. Coor. |          | Quality            |
| i arci        | •0.                    |           |            |          |          | Use-as-is                  |            |             | noforming         | Finishing        | 4          | ore/Packaging  |          | Other              |
| NCR I         | No.                    |           |            |          |          | Work Order Update          | 1          |             | Large Fab         | Composite        |            | Supplier       |          |                    |
|               |                        |           |            |          |          |                            |            |             |                   |                  | ·          |                |          |                    |
| Root          |                        |           |            |          |          | ption of work order update | 1          | nitial      | Acti              |                  | Sign &     |                |          |                    |
| Cause         |                        | Date      | Step       | Qty      |          | or Non-conformance         | Ch         | ief Eng     | Descri            | ption            | Date       | Verificatio    | n        | QC Inspector       |
| Doc/Data      |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Equip/Tooling |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Operator      |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Material      |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Setup         |                        |           |            |          |          |                            |            | •           |                   |                  |            |                |          |                    |
| Other         |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Process       |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Supplier      |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Training      |                        |           |            |          |          |                            |            |             |                   |                  |            |                |          |                    |
| Unapproved    |                        |           | <u> 1</u>  | <u> </u> |          |                            |            |             |                   |                  | <u> </u>   |                |          |                    |
|               |                        |           |            |          |          |                            | AUI        | LT CATE     | GORY              |                  |            |                |          |                    |
| Landi         | ing (                  | 1         |            |          | _        | General                    | _          | ٦           |                   |                  | <b>.</b>   |                | _        | 1_ /               |
|               | <u>_</u>               | Bending   |            |          | <u> </u> | Bend                       | _          | Grain       |                   | -                | Ovalized   |                | <u> </u> | Pressure/Forced    |
|               | <u>_</u>               | Centre N  | ot Conce   | ntric to | o/s      | BOM/Route                  | _          | Hardwa      |                   |                  | ⊣          | er tolerance   | <u></u>  | Temperature/Cure   |
|               | <u></u>                | Cracks    |            |          | <u> </u> | Broken/Damaged             |            | <b>-i</b> ` | ion Incomplete    | -                | Part Incor |                | _        | Weld               |
|               |                        | Crushed/  | Crimped.   |          | <u> </u> | Burrs                      | _          | ┥           | ions Incomplete/U | Jnclear          | Part Lost/ | <del>-</del>   |          | Wrong Stock Pulled |
|               | <u></u>                | Cuffs     |            |          | L        | Contamination              | _          | Mainte      |                   |                  | Part Move  |                |          |                    |
|               | Heat Treat Countersink |           |            |          |          |                            | Mislabeled |             |                   | Positioned Wrong |            | _              | 7        |                    |
| 1             |                        | Inspectio | n Strip in | Tube     |          | Cut Too Short              |            | Misread     | d                 |                  | Power Los  | s/Surge        |          | Other              |

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

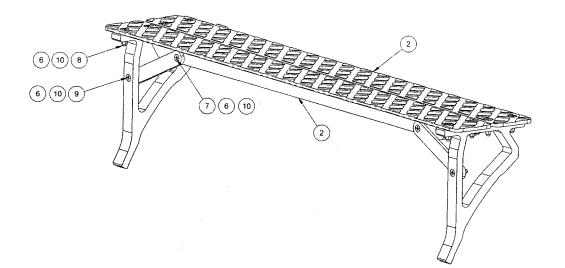
Drill Holes

Drawing

Finish

Folio

| тем | QTY PART NUMBER |               | DESCRIPTION  MAINTENANCE STEP ASSEMBLY |  |  |
|-----|-----------------|---------------|--|--|--|
| 1 X |                 | D4092-041     |  |  |  |
| 2   | 2               | D4092-1       | MAINTENANCE STEP                       |  |  |
| 3   | 1               | D4093-1       | BRACKET                                |  |  |
| 4   | 1               | D4093-3       | BRACKET                                |  |  |
| 5   | 2               | D4093-5       | BRACE                                  |  |  |
| 6   | 12              | MS21042L3     | NUT                                    |  |  |
| 7   | 2               | MS24694-S54   | SCREW                                  |  |  |
| 8   | 8               | MS24694-S55   | SCREW                                  |  |  |
| 9   | 2               | MS24694-S56   | SCREW                                  |  |  |
| 10  | 12              | NAS1149D0332J | WASHER                                 |  |  |



99181 MLJ 13-04-02

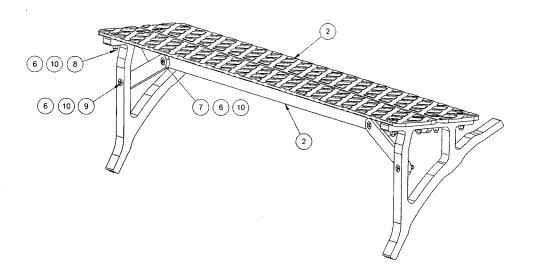
2011 -09- 2 2

D4092-041 MAINTENANCE STEP ASSEMBLY



| В             | REDRAWN; LOWERED FOR AESTHETICS RF 11.07.27 |     |   |                    | 14.07.07               |
|---------------|---|-----|---|--------------------|------------------------|
|               |   |     |   | RF                 | 11.07.27               |
| A             | NEW ISSUE                                   |     |   | RF                 | 10.09.16               |
| REV.          | L   |     | DESCRIPTION   | BY                 | DATE                   |
| DESIG         | N RF  |     | DART AEROSPACE USA, INC.  |                    |                        |
| DRAWN RF      |   | RF  |   |                    |                        |
| CHECK         | ŒD  | 140 | DRAWING NO.   |                    | REV. B                 |
| MFG. A        | PPR.  | 91  | D4092   |                    | SHEET 1 OF 6           |
| APPRO         | OVED  | Nes | TITLE   |                    | SCALE                  |
| DE APP        | PR.   | 4   | MAINTENANCE STE   | P ASS              | Y NTS                  |
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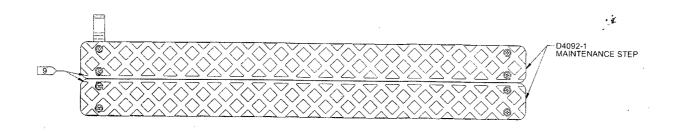
| ITEM | -042 | P/N DESCRIPTION |                           |  |
|------|------|-----------------|---------------------------|--|
| 1    | X    | D4092-042       | MAINTENANCE STEP ASSEMBLY |  |
| 2    | 2    | D4092-1         | MAINTENANCE STEP          |  |
| 3    | 1    | D4093-1         | BRACKET                   |  |
| 4    | 1    | D4093-3         | BRACKET                   |  |
| 5    | 2    | D4093-5         | BRACKET                   |  |
| 6    | 12   | MS21042L3       | NUT                       |  |
| 7    | 2    | MS24694-S54     | SCREW                     |  |
| 8    | 8    | MS24694-S55     | SCREW                     |  |
| 9    | 2    | MS24694-S56     | SCREW                     |  |
| 10   | 12   | NAS1149D0332J   | WASHER                    |  |

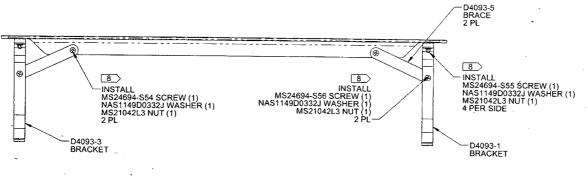


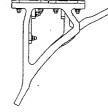
D4092-042 MAINTENANCE STEP ASSEMBLY



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|---------------|------|--|------------|
| DRAWN         | RF   |  |            |
| CHECKED       | 140  | DRAWING NO.  | REV. B     |
| MFG. APPR.    | gs/  | □D4092 <sub>sн</sub>   | EET 2 OF 6 |
| APPROVED      | Nife | TITLE  | SCALE      |
| DE APPR.      |      | MAINTENANCE STEP ASS'Y   | NTS        |
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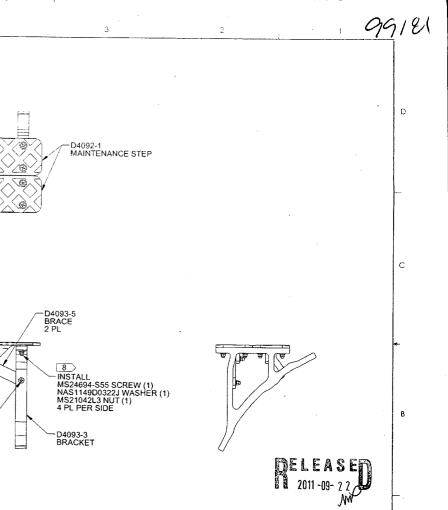
Đ

8

NOTES:
1) MATERIAL: N/A
2) FINISH: N/A
2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: PER QSI 044 6.1
7) WEIGHT: 5.37 lbs
8) TORQUE SCREWS UP TO 15-25 in-lb (1.7-2.8 N-m)
9) GRIP CUTOUT TOWARD CENTER

6

| DESIGN        | RF  | DART AEROSPACE USA, IN   | IC.       |
|---------------|-----|--|-----------|
| DRAWN         | RF  | ₩ KENT, WA   |           |
| CHECKED       | 140 | DRAWING NO.  | REV. B    |
| MFG. APPR.    | 91  | □ D4092 <sub>SHE</sub>   | ET 3 OF 6 |
| APPROVED      | MP  | TITLE  | SCALE     |
| DE APPR.      | -#  | MAINTENANCE STEP ASS'Y   | NTS       |
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## **D4092-042 MAINTENANCE STEP ASSEMBLY**

INSTALL MS24694-S56 SCREW (1) NAS1149D0322J WASHER (1) MS21042L3 NUT (1) 2 PL-

8

NOTES:
1) MATERIAL: N/A
2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: PER QSI 044 6.1
7) WEIGHT: 5.37 lbs
8) TORQUE SCREWS UP TO 15-25 in-lb (1.7-2.8 N-m)
9) GRIP CUTOUT TOWARD CENTER

7

8

8

D4093-1 BRACKET

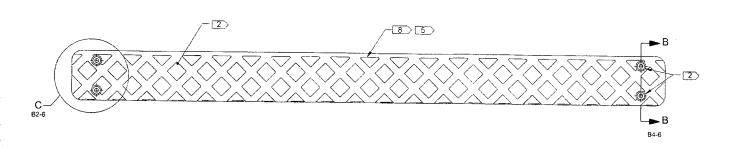
-INSTALL

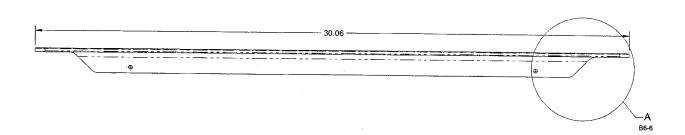
MS24694-S54 SCREW (1) NAS1149D0322J WASHER (1) MS21042L3 NUT (1) 2 PL

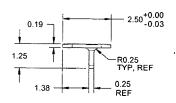
| DESIGN RF     |     | DART AEROSPACE USA, INC.   |                |  |
|---------------|-----|--|----------------|--|
| DRAWN         | RF  | KENT, WA   |                |  |
| CHECKED       | 140 | DRAWING NO.  | REV. B         |  |
| MFG. APPR.    | 91  | D4092 <sub>SHE</sub>   | SHEET 4 OF 6   |  |
| APPROVED      | NA  | TITLE  | SCALE          |  |
| DE APPR.      | -#  | MAINTENANCE STEP ASS'Y   | NTS            |  |
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3







D4092-1 MAINTENANCE STEP (MAKE FROM D2761 EXTRUSION)

NOTES:
1) MATERIAL: MAKE FROM D2761 EXTRUSION
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
BLACK ANTI-SKID PAINT GRIP AREA AS INDICATED PER DART QSI 005 4.4
MASK RECTANGULAR CUTOUT PRIOR TO APPLICATION OF ANTI-SKID
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX, NOT REQUIRED TO DEBURR GRIP AREA
6) IDENTIFICATION: N/A
7) WFIGHT: 1 97 Ibs

8

7) WEIGHT: 1.97 lbs 8) MACHINE 0.69 x 0.69 GRIP 0.030 DEEP AT 45 ° PATTERN 0.38 APART

| DESIGN     | RF   | DART AEROSPACE USA, INC.   |  |
|------------|------|--|--|
| DRAWN      | RF   | KENT, WA   |  |
| CHECKED    | 140  | DRAWING NO. REV. B   |  |
| MFG. APPR. | al   | D4092 SHEET 5 OF 6   |  |
| APPROVED   | 149  | TITLE SCALE  |  |
| DE APPR.   | 4    | MAINTENANCE STEP ASS'Y NTS   |  |
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